```
chain nodes:
6 7 9 15 16 17 19
ring nodes:
1 2 3 4 5 10 11 12 13 14
chain bonds:
2-6 4-7 5-9 11-16 12-17 13-15 14-19
ring bonds:
1-2 1-5 2-3 3-4 4-5 10-11 10-14 11-12 12-13 13-14
exact/norm bonds:
1-2 1-5 2-3 3-4 4-5 5-9 10-11 10-14 11-12 12-13 12-17 13-14 14-19
exact bonds:
2-6 4-7 11-16 13-15
```

G1:C1,Br

Match level:
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:CLASS 7:CLASS 9:CLASS 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:CLASS 16:CLASS 17:CLASS 19:CLASS fragments assigned product role:
containing 1
fragments assigned reactant/reagent role:

L1 STRUCTURE UPLOADED

=> d L1 HAS NO ANSWERS L1 STR

containing 10

^{*} STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.

=> s 11 full

FULL SEARCH INITIATED 14:01:28 FILE 'CASREACT'

SCREENING COMPLETE - 98 REACTIONS TO VERIFY FROM 9 DOCUMENTS

100.0% DONE 98 VERIFIED 8 HIT RXNS SEARCH TIME: 00.00.01

L2 1 SEA SSS FUL L1 (8 REACTIONS)

=> d 12

L2 ANSWER 1 OF 1 CASREACT COPYRIGHT 2008 ACS on STN

RX(1) OF 20

REF: PCT Int. Appl., 2005077913, 25 Aug 2005

NOTE: regioselective CON: 35 hours, 102 deg C

=> d 12 ibib abs

ACCESSION NUMBER:

L2 ANSWER 1 OF 1 CASREACT COPYRIGHT 2008 ACS on STN

143:229859 CASREACT <<LOGINID::20080920>>

1 DOCS

TITLE: Producing 4-nitroimidazole compounds

INVENTOR(S): Shinhama, Koichi

PATENT ASSIGNEE(S): Otsuka Pharmaceutical Co., Ltd., Japan

SOURCE: PCT Int. Appl., 89 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PAT	ENT :			KI	ND	DATE			Al	PPLI	CATI	N NC	ο.	DATE			
WO	WO 2005077913			A	1	20050825			WO 2005-JP2668				8	20050215			
	W:	ΑE,	AG,	AL,	AM,	AT,	AU,	AZ,	BA,	BB,	BG,	BR,	BW,	BY,	BZ,	CA,	CH,
		CN,	CO,	CR,	CU,	CZ,	DE,	DK,	DM,	DZ,	EC,	EE,	EG,	ES,	FI,	GB,	GD,
		GE,	GH,	GM,	HR,	HU,	ID,	IL,	IN,	IS,	KE,	KG,	KP,	KR,	KZ,	LC,	LK,
		LR,	LS,	LT,	LU,	LV,	MA,	MD,	MG,	MK,	MN,	MW,	MX,	MZ,	NA,	NI,	NO,
		NZ,	OM,	PG,	PH,	PL,	PT,	RO,	RU,	SC,	SD,	SE,	SG,	SK,	SL,	SY,	TJ,
		TM,	TN,	TR,	TT,	TZ,	UA,	UG,	US,	UZ,	VC,	VN,	YU,	ZA,	ZM,	zw	
	RW:	BW,	GH,	GM,	KE,	LS,	MW,	MZ,	NA,	SD,	SL,	SZ,	TZ,	UG,	ZM,	ZW,	AM,
		AZ,	BY,	KG,	ΚZ,	MD,	RU,	ТJ,	TM,	ΑT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,
		EE,	ES,	FΙ,	FR,	GB,	GR,	HU,	IE,	IS,	IT,	LT,	LU,	MC,	NL,	PL,	PT,
		RO,	SE,	SI,	SK,	TR,	BF,	ВJ,	CF,	CG,	CI,	CM,	GA,	GN,	GQ,	GW,	ML,
		MR,	NE,	SN,	TD,	TG											

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	CA	2555	372		A	1	2005	0825		CA	200	05-2	5553	72	2005	0215		
	EP	1720	838		A.	1	2006	1115		EP	200	05-7	1045	0	2005	0215		
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		2289			T		2008						1045		2005			
		2006		20	A.		2006						2010		2005			
	IN	2006	KN022	205	A		2007	0525		IN	200	06-KI	N220.	5	2006	0804		
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										JP	200	04-2	7899	9	2004	0927		
										WO	200	05-JI	P266	8	2005	0215		
OTH	IER SO	HECE	(8) .			MAD	DAT	143.1	22985	Q.								

OTHER SOURCE(S): MARPAT 143:229859

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AB The present invention provides a method for producing a 4-nitroimidazole (I, XI = H) at high yield and at high purity by a safe method causing few dangers such as explosion. The production method comprises iodinating a 4-nitroimidazole compound I (wherein each of XI and X2 represents a Cl or Br), and then reducing the obtained I (XI = I and X2 is the same as defined above). E.g., 2-bromo-5-iodo-4-nitroimidazole was prepared from 2,5-dibromo-4-nitroimidazole and NaI and the product treated with PtO in the presence of triethylamine in ethanol to give 2-bromo-4-nitroimidazole.

REFERENCE COUNT: THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THER EFORMAT

=> d 12 1-8

L2 ANSWER 1 OF 1 CASREACT COPYRIGHT 2008 ACS on STN

RX(1) OF 20

REF: PCT Int. Appl., 2005077913, 25 Aug 2005

NOTE: regioselective

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